



SYN-034DV.ST25

#4

SEQUENCE LISTING

<110> De Samblanx, Genoveva  
Broekaert, Willem  
Rees, Sarah

<120> Antifungal Proteins

<130> SYN-034DV

<140> US 10/006,252

<141> 2001-12-04

<150> 09/077,951

<151> 1998-06-10

<150> GB 9525474.4

<151> 1995-12-13

<150> PCT/GB96/03065

<151> 1996-12-12

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<170> PatentIn Ver. 2.0

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<223> Description of Artificial Sequence:primer

<400> 3

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 1 5 10 15  
 Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg  
 20 25 30  
 His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
50

<210> 9  
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<213> Raphanus sativus

<400> 9  
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1 5 10 15  
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
20 25 30  
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
35 40 45  
Phe Pro Cys  
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<210> 10  
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<212> PRT  
<213> Raphanus sativus

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Lys Leu Cys Glu Arg Ser Ser Gly Thr Trp Ser Gly Val Cys Gly Asn  
1 5 10 15  
Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Gly Ala Gln His  
20 25 30  
Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe  
35 40 45  
Pro Cys  
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<210> 11  
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<212> PRT  
<213> Raphanus sativus

<400> 11  
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20 25 30  
His Gly Ser Cys Asn Tyr Ile Phe Pro Tyr His Arg Cys Ile Cys Tyr  
35 40 45

Phe Pro Cys  
50

<210> 12  
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<212> PRT  
<213> Brassica rapa

<400> 12  
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1 5 10 15

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<210> 13  
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<220>  
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1 5 10 15

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<211> 30  
<212> PRT  
<213> Brassica napus

<400> 14  
Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys  
20 25 30

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<212> PRT  
<213> Brassica napus

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<212> PRT  
<213> Sinapis alba

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<210> 17  
<211> 26  
<212> PRT  
<213> Sinapis alba

<400> 17  
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
1 5 10 15

Asn Asn Asn Ala Cys Arg Asn Gln Cys Ile  
20 25

<210> 18  
<211> 27  
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ccaagtggga catggtcagg agtctgtgga aacaataacg catgcaagaa tcagtgcatt 180  
aaccttgaga aagcacgaca tggatcttgc aactatgtct tcccagctca caagtgtatc 240  
tgctactttc cttgttaatt tatcgcaaac tctttggtga atagttttta tgtaattttac 300  
acaaaataag tcagtgtcac tatccatgag tgattttaag acatgtacca gatatgttat 360  
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<400> 20  
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 1 5 10 15  
 Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30  
 His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45  
 Phe Pro Cys  
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<210> 21  
 <211> 47  
 <212> PRT  
 <213> Sorghum bicolor

<400> 21  
 Arg Val Cys Met Lys Gly Ser Ala Gly Phe Lys Gly Leu Cys Met Arg  
 1 5 10 15  
 Asp Gln Asn Cys Ala Gln Val Cys Leu Gln Glu Gly Trp Gly Gly Gly  
 20 25 30  
 Asn Cys Asp Gly Val Met Arg Gln Cys Lys Cys Ile Arg Gln Cys  
 35 40 45

<210> 22  
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<400> 22  
 Gln Lys Leu Cys Met Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
 1 5 10 15  
 Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30  
 His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45  
 Phe Pro Cys  
 50

<210> 23  
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<400> 23

Gln Lys Leu Cys Gln Arg Pro Ser Gly Gly Trp Ser Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 24

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<213> Raphanus sativus

<400> 24

Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Ser Ser Gly Val Cys Gly  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 25

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<213> Raphanus sativus

<400> 25

Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Met  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 26

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<213> Raphanus sativus

<400> 26

Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly

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His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr	35	40	45
Phe Pro Cys	50		

<210> 27  
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<400> 27
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1 5 10 15
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
20 25 30
His Gly Ser Cys Asn Gly Val Phe Pro Ala His Lys Cys Ile Cys Tyr
35 40 45
Phe Pro Cys
50

<210> 28  
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<400> 28
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1 5 10 15
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
20 25 30
His Gly Ser Cys Asn Tyr Val Met Pro Ala His Lys Cys Ile Cys Tyr
35 40 45
Phe Pro Cys
50

<210> 29  
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 <213> Raphanus sativus

<400> 29
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1 5 10 15



Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
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His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Gln Cys Ile Cys Tyr  
           35                  40                  45

Phe Pro Cys  
       50

<210> 30  
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<400> 30  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
                   20                  25                  30

His Gly Ser Cys Asn Tyr Val Pro Pro Ala His Lys Cys Ile Cys Ile  
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Phe Pro Cys  
       50

<210> 31  
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<400> 31  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
                   20                  25                  30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
           35                  40                  45

Phe Pro Cys  
       50

<210> 32  
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<400> 32  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

Ala Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 33  
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<400> 33  
 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Ala Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 34  
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<400> 34  
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 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Ala Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 35  
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<400> 35  
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 1 5 10 15

Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg His

20 25 30  
 Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe  
           35                  40                  45

Pro Cys  
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<210> 36  
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<400> 36  
 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
           20                  25                  30

His Gly Ser Cys Asn Tyr Val Pro Ala His Lys Cys Ile Cys Tyr Phe  
           35                  40                  45

Pro Cys  
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<210> 37  
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<400> 37  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
           20                  25                  30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
           35                  40                  45

Phe Pro Cys  
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<210> 38  
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<400> 38  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
           20                  25                  30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 39  
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 <212> PRT  
 <213> Raphanus sativus

<400> 39  
 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Arg Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Arg Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
 50

<210> 41  
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 <213> Raphanus sativus

<400> 41  
 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Arg Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 42  
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 <212> PRT  
 <213> Raphanus sativus

<400> 42  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Arg Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
 50

<210> 43  
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 <212> PRT  
 <213> Raphanus sativus

<400> 43  
 Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 44  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Arg His Lys Cys Ile Cys Tyr

35 40 45

Phe Pro Cys  
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<211> 51  
<212> PRT  
<213> Raphanus sativus

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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
20 25 30  
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Arg Cys Tyr  
35 40 45  
Phe Pro Cys  
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<210> 46  
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<212> PRT  
<213> Raphanus sativus

<400> 46  
Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
1 5 10 15  
Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
20 25 30  
His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
35 40 45  
Arg Pro Cys  
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<210> 47  
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aataagcttt ggacaagaga cagaagttgt gcatgaggcc aag 43

<210> 48  
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<213> Artificial Sequence

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<223> Description of Artificial Sequence:primer

<400> 49

ccaagtgggg gttggtcagg

20

<210> 50

<211> 21

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:primer

<400> 50

agtgggacat cctcaggagt c

21

<210> 51

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 51

ggagtctgta tgaacaataa cgc

23

<210> 52

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 52

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20

<210> 53

<211> 22  
 <212> DNA  
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<220>  
 <223> Description of Artificial Sequence:primer

<400> 53  
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<210> 55  
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<220>  
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<220>  
 <223> Description of Artificial Sequence:primer

<400> 56  
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<210> 57  
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 <213> Raphanus sativus  
 <400> 57

Gln Lys Leu Cys Glu Arg Pro Ser Arg Thr Trp Ser Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg  
 20 25 30



His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
 50

<210> 58  
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 <213> Raphanus sativus

<400> 58  
 Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
 50

<210> 59  
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 <213> Raphanus sativus

<400> 59  
 Gln Lys Leu Cys Glu Arg Pro Ser Arg Thr Trp Ser Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
 50

<210> 60  
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<400> 60  
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 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
 50

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<400> 61  
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 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
 50

<210> 62  
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<400> 62  
 Gln Lys Leu Cys Gln Arg Pro Ser Arg Thr Trp Ser Gly Val Cys Gly  
 1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45

Phe Pro Cys  
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<210> 63  
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<400> 63  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
 20 25 30

His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr

35                                      40                                      45  
 Phe Pro Cys  
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 <210> 64  
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 Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
                     20                                      25                                      30  
 His Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr  
                     35                                      40                                      45  
 Phe Pro Cys  
     50  
  
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 Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
                     20                                      25                                      30  
 His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
                     35                                      40                                      45  
 Phe Pro Cys  
     50  
  
 <210> 66  
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 <400> 66  
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 Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg  
                     20                                      25                                      30  
 His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
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Phe Pro Cys  
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<210> 67  
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<400> 67  
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1 5 10 15  
Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Gly Ala Gln His  
20 25 30  
Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr Phe  
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Pro Cys  
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<400> 68  
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Gly Ser Cys Asn Tyr Arg Phe Pro Ala His Lys Cys Ile Cys Tyr Phe  
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Pro Cys  
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<400> 69  
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Pro Cys  
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Pro Cys  
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<400> 71  
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35 40 45

Pro Cys  
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<210> 72  
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<213> Raphanus sativus

<400> 72  
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Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Gly Ala Arg  
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His Gly Ser Cys Asn Tyr Ile Phe Pro Tyr His Arg Cys Ile Cys Tyr  
35 40 45

Phe Pro Cys

50

<210> 73  
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<400> 73  
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 Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Gly Ala Arg  
           20                  25                  30  
 His Gly Ser Cys Asn Tyr Arg Phe Pro Tyr His Arg Cys Ile Cys Tyr  
           35                  40                  45  
 Phe Pro Cys  
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<210> 74  
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<400> 74  
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           20                  25                  30  
 His Gly Ser Cys Asn Tyr Arg Phe Pro Tyr His Arg Cys Ile Cys Tyr  
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<400> 75  
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           20                  25                  30  
 His Gly Ser Cys Asn Tyr Ile Phe Pro Tyr His Arg Cys Ile Cys Tyr  
           35                  40                  45  
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 His Gly Ser Cys Asn Tyr Ile Phe Pro Tyr His Arg Cys Ile Cys Tyr  
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 Phe Pro Cys  
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<210> 77  
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<220>  
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<400> 77  
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 20 25 30  
 His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr  
 35 40 45  
 Phe Pro Cys  
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